IN THE CLAIMS

Please amend the claims as provided in the attached new set of claims.

Claims 1-4 have been objected to by the examiner, but indicated as containing patentable subject matter. The suggested language of the examiner has been incorporated into claims 1 and 3.

A new independent claim has been added to the application. For ease of numbering, claim 4 has been cancelled. This new independent claim is now numbered as claim 8, and the subject matter from former claim 4 can now be found in new claim 9. It is believed that the subject matter of claim 8 is allowable for the same reasons as the previously allowable subject matter.

For (*inter alia*) ease of numbering, the device claims 5-7 have been cancelled. The device claims are now new claims 10 and 11. In claim 10, the extraneous letter "a" that was present in former claim 5 has been removed.

The device claims have been amended by incorporating the limitations from former dependent claim 7 into the independent claim, and in addition by adding the limitation to the independent claim that the device functions by utilizing the method according to the invention. It is believed that since the method has been considered to be novel and non-obvious, that this limitation should render the device non-obvious as well.

CLAIMS

1. (currently amended) Method for determining the penetration rate of a gaseous substance into a closed package made of a package material,
characterised in that the method comprises:
- flushing the package with an inert gas for a sufficiently period to ensure that the interior of the package contains only small amounts of the gaseous substance, and then seal off the package against the ambient atmosphere,
- exposing the closed package to ambient atmosphere containing a known quantity of the gaseous substance for a first specified time period,
- when reaching the end of the first time period, determine a first concentration of the gaseous substance within the package at the end of the first time period,
- allowing the package to be exposed to the ambient gas for a second time period,
- when reaching the end of the second time period, determine a second concentration of the gaseous substance within the package at the end of the second time period, and
- employ the two measured concentrations of the gaseous substance in ~~Eqn (5)~~ the equation: $\frac{dV_{Oxygen}}{dt} = \frac{V\kappa}{p_{atm}}(p_0 - p_1)e^{-\kappa(t-t_1)}$ to predict the penetration rate of the gaseous substance into the closed package as a function of time.

2. (original) Method according to claim 1,
characterised in that the gaseous substance is oxygen, and that the inert gas is pure nitrogen.

3. (currently amended) Method for performing spot tests to evaluate the penetration rates of a oxygen into an empty closed package in relation to a reference value,
characterised in that the method comprises:
1) in the case where the reference value is not available:
- establish a set of reference values of the oxygen transmission rate for all times by performing a series of screening tests of packages made of the same material and which has equal dimensions as the said package for a set of conditions the package is expected to meet in commercial handling by employing the method as given in claim 2 or 3, except that the oxygen transmission rates should be given as the resulting oxygen concentration inside the package ~~(employ Eqn. (3) instead of (5))~~ by employing equation:
$p(t) = p_0 + (p_1 - p_0)e^{-\kappa(t-t_1)}$,
- perform spot testing of the said package, where the spot testing involves to first flush the empty package with inert gas such that practically all of the said gaseous substance is removed, leaving the package to be exposed to the ambient atmosphere for a certain time period, and then determine the oxygen concentration of the said empty package, and
- compare the determined said oxygen concentration after the time period with the

reference value to determine whether the oxygen transmission rates of the said package are equal to the reference packages, or

2) in the case reference values are available:

- perform spot testing of the said package, where the spot testing involves to first flush the empty package with inert gas such that practically all of the said gaseous substance is removed, leaving the package to be exposed to the ambient atmosphere for a certain time period, and then determine the oxygen concentration of the said empty package, and
- compare the determined said oxygen concentration after the time period with the reference value to determine whether the oxygen transmission rates of the said package are equal to the reference packages.

4. (cancelled)

5. (cancelled)

6. (cancelled)

7. (cancelled)

8. (new) Method for determining the penetration rate of a oxygen into a closed package, characterised in that the method comprises:
   - inserting means for withdrawing a gas sample from the package in such a manner that the interior of the package is not exposed to ambient gas (outside the package),
   - flushing the package with pure nitrogen for a sufficiently period to ensure that the interior of the package contains only little oxygen,
   - exposing the closed package to ambient for a first specified time period,
   - when reaching the end of the first time period, inserting a specified amount of pure nitrogen gas into the package and allowing the inserted nitrogen to mix homogeneously with the gas inside the package,
   - when the gas inside the package is homogeneously mixed, withdraw a gas sample with exactly the same volume as the inserted nitrogen, and analyse the gas sample from the interior in order to determine the concentration of the oxygen in the sample after the first time period,
   - allowing the package to be exposed to the ambient air for a second time period,
   - when reaching the end of the second time period, withdraw another sample of the gas from the inside of the package and analyse it in order to determine the oxygen concentration in the sample after the second time period, and
   - insert the two measured oxygen concentrations in equation

   $\frac{dV_{Oxygen}}{dt} = \frac{V\kappa}{p_{atm}}(p_0 - p_1)e^{-\kappa(t-t_1)}$ and/or equation $\left.\frac{dV_{Oxygen}}{dt}\right|_{t\to t_0} = \frac{p_0 V\kappa}{p_{atm}}$ to predict the

   oxygen transmission rate into the package.

9. (new) Method according to any of claims 1,2,3 or 8, characterised in that the package is a food package or a pharmaceutical package.

10. (new) Device for determining spot tests of the penetration rate of a gaseous substance into a closed package by using the method according to any of claims 1,2,3 or 8, where the package that is being tested is initially flushed with inert gas, sealed, and then exposed to the ambient atmosphere for a certain time period,
characterised in that it comprises:
- an injector which is capable of withdrawing gas samples from the interior of the package,
- a gas analyser that is in communication with the injector and which determines the concentration of the gaseous substance,
- computer hardware that is in communication with the gas analyser, and which is able to memorise a set of predetermined reference values of the transmission rates as a function of time for different ambient conditions,
- computer software incorporated into the computer hardware that is able to register the measured gas concentration directly from the gas analyser and then compare it with the reference values, and
- displaying means that is able to display the comparison between the actually determined and the reference value of the gas concentration.

11. (new) Device according to claim 10,
characterised in that the gaseous substance is oxygen, and that the inert gas is pure nitrogen.